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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Garrett R. Vargas

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EXAMINER

BANANKHAH, MAJID A

ART UNIT

PAPER NUMBER

2127

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/784,095	Applicant(s) VARGAS ET AL.	
	Examiner Majid A Banankhah	Art Unit 2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 15-18, 24 and 25 is/are allowed.
- 6) ☒ Claim(s) 8-14 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This office action in response to the Remarks filed on June 30, 2004. Applicant's arguments with respect to claims 1-7, 15-18, overcome the rejection of those claims in the previous office action. However, with respect to claims 8-14, and 19-23 has been fully considered but they are moot in view of the new ground of rejection. Claims 1-7, 15-18, and the newly added claims 24-25 are allowed.
2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior Office action.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 8-14, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin and Tarng (SCHEDULING PERIODIC AND APERIODIC TASKS IN HARD REAL-TIME COMPUTING SYSTEMS, Tein-Hsiang Lin and Wernhuar Tarng, Department of Electrical Engineering and Computer Engineering State University of New York at Buffalo, Buffalo, New York, 1991)

Per claims 8 and 19, a computer-readable medium having computer-readable instructions for Performing steps including:

storing, in a memory, a schedule list having a plurality of time entries indicating times at which a plurality of critical processes are to be checked to determine whether said critical processes remain active, wherein said time entries in said schedule list are synchronized (page 31, R. Col. , first paragraph, and page 32, section 2, A FESIBILITY CHECKING ALGORITHM, AND, to page 33, before, section 3, and Fig. 1, [task t_1 , t_2 , t_3 ; comp. Times, and periods]);

using said schedule list to periodically verify that said critical processes remain active (page 32, feasibility study to determine if all deadlines are guaranteed under any specific priority assignment); and

taking corrective action when one of said critical processes no longer remains active (page 33, in FC algorithm, when a task is no longer active, the FC algorithm).

The system of Lin and Tarng, fails to explicitly teach of scheduling of periodic tasks in a manner such that tasks don't loose their deadline, he fails to teach of the time entries in the schedule list are synchronized. However, by definition, in task scheduling, synchronization is the matching of timing between separate computers or among the components of a system such as time entries of the tasks in order for the system to perform more efficiently and the tasks not loose their

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deadline. Therefore, it would have been obvious for a person ordinary skill in the art at the time the invention was made to synchronize the list of time entries in the schedule list of Lin and Tarnng in order to for the process not to loose their deadline.

Regarding the event identification information the periods associated with each task identify the periodic task.

Per claim 9, the computer-readable medium of claim 8, wherein said computer-readable instructions for performing said step of using said schedule list are for further performing the steps of:

- sending a first signal to a first critical process at a first time in said schedule list;
- waiting for a second time in said schedule list, wherein said second time corresponds to said first critical process (task t_2 for example receives a first signal to start and terminated on the second signal, page 33, Fig. 1);
- at said second time, determining whether a response to said first signal was received from said first critical process;
- resending said first signal to said first critical process if said response was received (the task is restarted for the second period, page 33, Fig. 1), and
- taking corrective action if said response was not received from said first critical process (when the periodic task is completed, the deadline is missed and the task is stopped).

Per claim 10, the computer-readable medium of claim 9, wherein said computer-readable instructions for performing said step of taking corrective action are for further performing the step of restarting said first critical process (the periodic task is restarted, page 33, Fig. 1, and page 34, Fig. 2).

Per claim 11, the computer-readable medium of claim 8, wherein said schedule list further comprises information identifying one or more of said plurality of critical processes.

Per claims 12 and 20, the computer-readable medium of claim 8, wherein a last time entry in said schedule list includes a time value that is a common multiple of a plurality of periods associated with said plurality of critical processes (see periodic tasks in page 33, and 34, they all have a period associated with them).

Per claim 13, the computer-readable medium of claim 8, wherein said computer-readable medium is enclosed within a portable computing device (in the system of Lin and Tarnng the feasibility study is an algorithm).

Per claim 14, the computer-readable medium of claim 13, wherein said portable computing device is a cellular telephone or a pager. It is well known in the art to program a CPU according to the algorithm in any device such as cellular phone

Per claim 21, the device of claim 20, wherein said first one of said processes is a critical

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process monitor, and said one or more of said plurality of processes includes a critical process (the high priority tasks of Lin and Tarng system).

Per claims 22-23, the device of claim 19, wherein said memory is a single memory, and wherein said processor is a single processor (the processor and memory of Lin and Tarng).

5. Claims 1-7, 15-18, and 24-25 are allowed.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Majid A. Banankhah** whose telephone number is (571) 272-3770. The examiner can normally be reached on Monday – Thursday, 8:00 AM – 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756.

Information regarding the status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Maid Banankhah

10/4/04


MAJID BANANKHAH
PRIMARY EXAMINER

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